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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,892	09/09/2002	Kari Horneman	915-003.4	2756

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EXAMINER

MEEK, JACOB M

ART UNIT PAPER NUMBER

2637

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/070,892	HORNEMAN ET AL.	
	Examiner	Art Unit	
	Jacob Meek	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-20, 22-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-34 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 7-10, 12-20, 22-24 is/are rejected.
- 7) ☒ Claim(s) 6, 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed December 2, 2005 have been fully considered with regard to claims 1, 16, 19, and 23 but they are not persuasive.

With regard to applicant's argument regarding "power spectral density function" (pages 13 – 14), while applicant's disclosed invention may indeed differ from Hayashi's invention as summarized by applicant, Examiner points out that the term "power spectral density function" when given its broadest interpretation would describe means for measuring the power density spectrum of a signal. In light of this interpretation, Hayashi does meet the requirement of classification of data frames based on power spectral density function. Applicant's arguments demonstrate that Hayashi performs a set of mathematical calculations which when considering the definition of function (**5 a** : a mathematical correspondence that assigns exactly one element of one set to each element of the same or another set **b** : a variable (as a quality, trait, or measurement) that depends on and varies with another <height is a *function* of age>; also : RESULT <illnesses that are a *function* of stress>; **7** : a computer subroutine; *specifically* : one that performs a calculation with variables provided by a program and supplies the program with a single result) it is held that Hayashi does define a power spectral density function. Further, Hayashi discloses the measurement of power as a function of bands (see column 9, lines 25 – 67), which is interpreted as a power spectral density measurement. Ling also teaches this limitation as shown in rejection below.

2. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., center-of-moment) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read

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into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 4, 5, 7 – 10, 12 – 15, 19, 23, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Hayashi (US-5,978,428).

With regard to claim 1, Hayashi discloses a method for estimating data transmission rate in a communication system with variable data transmission rates wherein transmissions signal includes a plurality of data symbols over a sequence of data frames (see abstract), comprising: classifying a data frame of a received transmission signal in accordance with a predefined classification of the data transmission rates (see figure 3, and column 4, lines 53 – 61); and estimating the data transmission rate of the received data frame on the basis of classification (see column 5, lines 59 – 67); wherein data frames are classified based on power spectral density function estimate of the received transmission signal (column 5, lines 28 – 33 and column 9, line 25 – column 10, line 36).

With regard to claim 2, Hayashi discloses the data frames are classified based on frequency content of received transmission signal (see column 6, lines 44 – 47) where this is interpreted as equivalent).

With regard to claim 4, Hayashi discloses that his system can be implemented using a DSP and SW of which FFT is a known means (See column 6, lines 50 – 54), and averaging the power of data symbol sequence (column 5, lines 28 – 33).

With regard to claim 5, Hayashi discloses that his system can be implemented using a DSP and SW of which FFT is a known means (See column 6, lines 50 – 54), and that power detection occurs by taking into account symmetries of data symbols (see column 8, lines 10 – 18).

With regard to claim 7, Hayashi discloses that his system normalizes power spectral density function estimate is normalized by summing the elements of power spectral density function (see figure 2, a4, p8, figure 4, and column 4, lines 31- 52).

With regard to claim 8, Hayashi discloses a method of removing effects of noise (see column 7, lines 39 – 53).

With regard to claim 9, Hayashi discloses that his system subtracts an element of noise from the power spectral density function (see column 7, lines 53 – 62).

With regard to claim 10, Hayashi discloses calculating a variable from power density spectral function (see column 5, lines 1 – 21), and comparing the values against limit values of a classification decision structure (see column 6, lines 37 – 43).

With regard to claim 12, Hayashi discloses that the magnitude of the variable varies as a function of frequency content (see column 4, lines 41 – 52).

With regard to claim 13, Hayashi discloses system is CDMA with base and mobile stations (see column 1, lines 41 – 49).

With regard to claim 14, Hayashi discloses the number of data transmission rate classes of predefined classifications equals the number of the possible defined data rates (see column 4, lines 53 – 59).

With regard to claim 15, Hayashi discloses the number of data transmission rate classes of predefined classifications is less than the number of the possible defined data rates (see column 10, lines 47 – 55).

With regard to claims 19 and 20, Hayashi discloses signal receiving circuitry for use in a communication system (see abstract) incorporating the method of claims 1 and 2, and therefore would have been obvious given the aforementioned rejection of claims 1 and 2.

With regard to claims 23 and 24, Hayashi discloses that his apparatus is operable in a CDMA system, which is understood to consist of base and mobile systems (see column 1, lines 11 – 16) and incorporates the method of claim 1, and therefore would have been obvious given the aforementioned rejection of claim 1.

4. Claims 16 – 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ling et al (US-5,619,524).

With regard to claim 16, Ling discloses a method for channel estimation in a CDMA system wherein a plurality of data symbols is spread over a sequence of data frames in a transmission signal with variable data transmission rates (see abstract, an) comprising: classifying data frame of a received transmission signal in accordance with a predetermined classification of data transmission rates (see figure 9, 171 and column 16, lines 26 – 50), and estimating the data transmission rate of the received frame based on basis of classification (see column 16, lines 26 – 50); wherein data frames are classified based on power spectral

density function estimate of the received transmission signal (column 15, line 63 - column 16, line 50 where this is interpreted as equivalent functionality).

With regard to claim 17, Ling discloses a method of rate selection for Viterbi decoding (see column 9, line 52 – column 10, line 15).

With regard to claim 18, Ling discloses data rate information received from a transmitting station and the estimated data transmission rate are both used in channel estimation (see column 17, lines 39 – 65).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi ('428) in view of Ling ('524).

With regard to claim 22, Hayashi is silent with respect to channel estimation. Ling discloses that channel estimation is a standard part of CDMA receivers (see column 3, lines 6 – 11). It would have been obvious to one of ordinary skill in the art to combine a rate estimator with a channel estimator to provide in order to improve system performance (see '524, column 4, lines 14 – 29).

Allowable Subject Matter

6. Claims 6 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 25 – 34 are allowed.

8. The following is an examiner's statement of reasons for allowance: The combination of elements and functions associated with these claims do not appear to be anticipated or rendered obvious by prior art, in particular, the operation of calculation of power.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Meek whose telephone number is (571)272-3013. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571)272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMM
2/9/06

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PRIMARY EXAMINER
wed 2/9/06